



Enterprise Solutions Competency Center

ESCC

Lessons learned on major Federal ERP implementations or

Risks to your project

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1. Background and assumptions:

This paper assumes a major ERP system has been selected for implementation, SAP or Oracle. In addition, it is assumed a major implementation partner will be contracted to assist with the implementation. Assist is the action word here; your resource commitment will be discussed later. Lessons learned are not intended in this paper to only refer to negative lessons learned.

ERP implementations are not IT projects; functional leaders must support projects to have success. Functional expertise/subject material experts in processes and user requirements are required to compose at least 30% of implementation core team. Projects have a greater chance of success if these experts outnumber implementation contractor personnel by 4 to 1. Commercial implementations use a ratio of 5 to 1 but federal implementations appear limited to a 1 to 1 ratio. This reduced ratio can lead to surprises from users late in the implementation cycle.

Some organizations have treated COTS implementations as technical projects, requiring technical skills to implement. While there are technical aspects to implementations most efforts should be concentrated on functional processes and their configuration. You don't need to know a one-tier from a two-tier to configure the different types of purchasing document types (P-card, MILSTRIP, etc) your organization needs....and which fields are required on which type!

Visit www.esi.mil. Enterprise Software Initiative awarded BPA in May 2004, DoD programs considering use of Oracle and SAP ERP software should reduce costs of systems integrators through its use. You should also assume that your contract, SOO and SOW with the implementation partner will require major changes as the project progresses.

Visit www.army.mil/escc. Army Enterprise Solutions Competency Center (ESCC) provided by U.S. Army PEO EIS and Software Engineering Center (SEC-Belvoir) provides training material and serves as ERP/SOA/CPI/Change Management resource center. The ERP/SOA resource center provides education material; a basic introduction to ERP as well as more in-depth material addressing advanced ERP topics. Don't reinvent the wheel ask ESCC.

ESCC Services for Army ERP / SOA Programs

1. ERP/SOA Consultancy services provide:
 - a. Vendor selection support
 - b. Coaching, assessment and recommendations to Army ES programs
 - c. Compliance feedback to the leadership of Army ES programs
2. ERP/SOA Laboratory allows the Army community to:
 - a. Access best-of-breed software
 - b. Test new software functionality
 - c. Proof concept models, technical solutions and integration
3. ERP/SOA Education provided through the ESCC website assists with:
 - a. Development and sharing of white papers
 - b. Development and delivery of relevant traditional instruction and virtual / distance training,
 - c. Maintenance of a repository of lessons learned



Top 10 Reasons Implementations fail:

1. Governance – No single person in charge who reports directly to senior executives.
 2. Scope – The implementation contract doesn't align with an enterprise solution, but is aligned with programs, systems, or other non-enterprise artifacts.
 3. Change Management – Insufficient investment in Change Management Initiatives.
 4. Skills – Implementation team does not have a thorough understanding of enterprise technologies.
 5. Decision Making – Consensus decision making as opposed to rapid decision making.
 6. Communications – Lack of communication at all levels.
 7. Solution Architecture – No solution architecture and appropriate implementation methodology.
 8. Training – Insufficient investment in project team and end user training and executive education.
 9. Culture – Trying to force the enterprise software into a stove piped culture.
 10. Leadership – Lack of project continuity because of leadership.
- ESCC handbook "Enterprise Resource Planning Reference Guide"

10 Reasons Implementations succeed

1. Governance – A structured program enables senior leadership visibility and accountability.
2. Scope – An end-to-end Enterprise Process view of business processes leads to a more accurate understanding of the scope of work required to meet organizational requirements.
3. Change Management – Sufficient investment in CM activities, -- the people side of change.
4. Skills – Implementation team is provided with adequate training on ERP software, project software tools and the System Integrator ERP Methodology.
5. Decision Making – Rapid decision-making instead of consensus decision-making.
6. Communication – Frequent communication targeted to all levels.
7. Solution Architecture – Creation of a COTS/ERP solution architecture and use of appropriate implementation methodology.
8. Training – Sufficient investment in project team and user training and executive education.
9. Culture – Designated personnel act as change agents who understand the cultural changes which will occur due to the ERP implementation.
10. Leadership – Project leadership continuity and consistent feedback.



2. Project scope

Project should be scoped/planned from the beginning to be implemented in phases. This includes phased implementation of ERP software and phased organizational implementations. Many Public Sector implementations attempt implementation of full suite of vendor's modules, private sector will often build some throw away interfaces in order to implement modules (i.e. financials) in phases. This may be more costly, but can be cost effective in the long-term by building confidence in the team and plan. Plan some small early wins, to build credibility for your project.

Implementation teams will normally recognize from the beginning that they must implement their organizational units in a phased approach, but a major mistake is not carefully evaluating operational scope for a phased deployment.

ERP systems are more like custom software, in that will have to be tuned up after deployment and to do this tuning across a large number of modules/functionality and within a large organizational structure is very difficult. A project can lose a lot of support with time taken to make these changes. Many times organizations will attempt to implement the latest tool or model, without understanding them completely. SOA, CRM, and ABC are some past examples. It is not that these are bad moves it is mainly a lack of understanding within an organization of how these functionality will be used to its fullest potential. Usually within a year of deployment super users will better understand system capabilities and uses, driving the project to make changes which enhance value to organization.

It is best to start with a small deployment, see where problems develop or excess time (employee effort) is being spent and make changes as required. Scope creep can occur at a number of levels, from adding a new module for warehouse management to adding an approval process for a transaction. (See project management section.)

Scope of project should be limited to insure a timely deployment; then project can be viewed and marketed as a win for the organization. Limiting scope will in most cases result in some throwaway interfaces and delayed savings (ROI), because existing systems can not be shutdown until full deployment.

DoD Directive 5000 series

The DoD Directive 5000 series certification practices include system architecture compliance and certification that is too complex and unwieldy for COTS products and encourages users to find ways around the system in order to succeed. Directive "IT creativity" can work against a large systems implementation, 5000.2 requires 50 individual document checkpoints and the concept of "flexibility to streamline", the directive gives organizations the power to add their own requirements, moving the system away from configuration toward customization. One of the big advantages to having a COTS system is to have the provider supply patches and upgrades. 5000 series requirements for reviews and certifications for each implementation of a COTS package drives costs up and limits organization's ability to rapidly expand, integrate and leverage the enterprise technologies vendors offer.



Scope creep

The modules and functionality in ERP systems are all linked and interact well with each other, for example most of the time accounting entry(s) for logistics transactions is automatically generated by the system. It is very easy to appear to cost justify adding functionality/modules/sub modules to your project, but be very careful. Adding scope can and will jeopardize your project. And/or you will have to change your project plan, which you will probably do at any rate. The challenge is the concept of the project in the RFP is at 10,000 feet and you will identify changes required. In one case a DoD organization brought in “experts” (even some from Gartner) for a year to develop their ERP plan and write their RFP, within 2 weeks of working with the integrator they changed some major parts of the plan.

Consider increasing scope by challenging existing stovepipe systems which are “mandated”? Can your project perform functionality cheaper, eliminating interfaces and providing real time integration?

Can the additional functionality be moved to the next phase of the project?

3. Project Management

Project Management Office (PMO) must be established and have the power to provide project governance, including issue resolution, scope management and decision making.

ERP solutions have their operations based in IT organizations, but implementation requires functional knowledge to configure and test the product. Project Management team expertise is a critical part of making any implementation a success. Sponsorship and support of organizations leaders is also critical to success. It is important that sponsorship be seen as coming from functional areas in organization where employees will be using the new system. Functional leaders must communicate the vision and oversee the execution. It is important for sponsors and PMO to have open and frequent communications.

Procure and train team on Data Quality tools at the start of project. Will the team go through CMMI?

Entry and Exit Criteria for each phase must be established and approved.

Set up a team to coordinate with interfacing systems. Stay on top of changes they are making and create documentation of interfacing agreements. Consider paying other systems to make changes, if the changes can be cost justified within you budget.

Goal is to reduce customization and/or enhancements to your implementation, see change management.

Only use third-party applications (bolt-ons) when a compelling business case exists and functionality of ERP does not meet Federal requirements.

Project plan must be established at high levels and driven to lower levels to achieve an aggressive schedule. Project plan updates and monitoring must be given the highest priority to maintain momentum.

ERP software is not plug and play, it requires a serious commitment of time and resources from functional and IT organizations. These personnel commitments must be for full time team members and managed by PMO.



PMO must set up and communicate procedures for shared documents and work in products. Using SharePoint is one example. Software must have workflow process and offer version control.

A process documentation system will be required, such as UPerform. These systems semi automate process documentation (Business Process Procedures) which is the basis for training material.

Test end to end processes not just individual transactions. For example, Requisition to payment. Test commitment, obligation, goods receipt, invoice and payment. Allow for real life variables, such as partial goods receipts, price changes.

Plan and communicate conversion time line with leadership. Provide processes for operations during any “black out” period.

Realize that the team needs to understand the legacy systems in order to effectively implement the new system. Therefore you have to identify “legacy” subject matter experts and actively harvest and transfer their related knowledge

Set expectations. During go live phase there will be bugs discovered, they always crop up regardless of how much testing is done. There will be data conversion issues; e.g., wrong part numbers, vendor numbers or inventory numbers. There may be process bottlenecks; e.g., new places where data is being entered, or where there are linkages to legacy systems. There will be documentation and training issues; it usually takes users 6 months for user to feel totally comfortable with a new system. All of this affects productivity. A dip in productivity is normal; it does not mean that ERP was not implemented correctly, or that it is failing. For most companies, the recovery time is less than six months. There is a high correlation between short productivity dips and effective change management practices. Long productivity dips correlate with lack of commitment to change management.

It is difficult to convince Commanders that they should dedicate their best and brightest resources. Staffing requirements have to be sold to management.

Cooperation is necessary and sometimes difficult with the data cleansing effort. Sometimes, because of what they do, clients do not want to release data to the cleansing teams. Your team should identify and possibly eliminate old items.

You need to constantly market the need to collaborate. Collaboration and the mechanisms for doing so must be part of your execution plan.

Hold more face-to-face meetings. More information is shared at face-to-face meetings than during VTCs.

Have informal meetings, lunch and smoke breaks. Such meetings provide an opportunity to hear what’s “really” going on and provide more informative training/learning opportunities.

Terminate utilization of legacy programs as early as possible. The tendency in the event of problems is to fall back on the legacy data. Utilize time spent on maintaining legacy systems to troubleshoot SAP implementation problems.

Risk Management

A risk assessment guide must be used to educate team members on risk recognition. A risk management plan must be established which outlines the organization and management approach for planning, assessing, mitigating, and monitoring risks associated with the successful execution of the project. All risks must have an owner.

Use of competent subject matter experts from the organization and clear governance will help mitigate risk.



Issue Management

Project issues are situations or decisions having an impact on project progress that a *person* may uncover but may not have the authority, knowledge, or time to resolve. An issue management plan is required and all issues must be assigned an owner responsible for resolution. Address issues methodically, it is the only way to ensure new system is not burdened by data quality and functionality problems. Note “*person*” was used in the above sentence, issues can be identified by management, implementation team members and/or users who have seen some of all of the solution, all personnel should have the ability to create issues. Issues log/dB should not become a FAQ.

Key Learning’s:

- One of the assumptions made was that they were working in a perfect world where everyone was working with the same baseline quality of data. The wrong people/SMEs were engaged at the start that were not privy to the unique issues and business circumstances of the installations.
- Team did not fully understand what the installations did. Situations and functions that were unique to a specific installation existed that would have been helpful to know and address up front, rather than later when the issue became more critical.
- There’s an institutional or cultural reluctance for installations to ask for help. It’s seen as a negative to ask for help and not a positive.
- More functional area input into requirements definition is needed. This input must be provided by true functional specialists and experts at the installations not via another installation conduit who is not as familiar with the functional details or the legacy data environment.

Advice:

- Go to the installation SMEs and review and detail their business processes and functions first. You will get more accurate assumptions and data to work with from the start with which you can build the data cleansing processes, rules, and plans.
- In engaging with the installations, put together a site survey that is designed to better define the requirements by exposing the deltas and differences between the sites. The differences between the installations need to be discovered so that as you develop and propagate the MCN data cleansing guidance you have a more useful template for the installations to use within their context.
- Include more functional area input from the installations in the actual requirement development. Go to the functional SMEs at the installations directly and ask them about their business processes. If we had gone to them first, we would have had a better understanding of the data and business realities. This may require talking to the installation Commander to be sure the proper functional SME is identified.
- Set up a server for team documentation, issues dB...



Working with an integrator

Independent Systems Integrators are necessary, the group of integrators with federal implementation experience is limited; make sure your team includes experienced personnel. FYI, these personnel will have to come to your project site from all over the country, be prepared for these travel expenses.

- System integrators have ERP implementation methodologies, but must do not contain DoD 5000 milestones. Use DoD Enterprise Integration (EI) Toolkit Roadmap and map these milestones into integrators methodology.
- Integrator personnel will make up the core of your implementation team, in most cases they will have to be on the project from start of Blueprint to Deployment. Some should also be available for go-live support and possibly for continuing support. It is not possible to bring in someone for 3/6 months to configure a module – for example SD. The integrators from all modules interact with each other working on integration issues from Blueprint to Deployment
- Your core functional and IT teams should be just as large as the integrators, ideally they should be larger. In commercial implementations, where the company does not want to continue contractor support after go-live, in house teams are recommended to be four times larger than the integrators. These two groups must work together in a dedicated space with lots of open space or many conference rooms. Your goal should be to have a visitor to team space not able to identify integrator from government civilian personnel. They should function as one team.
- Encourage an environment where business area experts can regularly share their implementation lessons with one another.
- To remain results oriented, it means truly adopting the integrator as part of your team.
- Have your most knowledgeable personnel working with the developers from the beginning to assure quality delivery.
- The implementers need to fully understand your business and you may need to dedicate personnel and time to “teach” them.
- The implementer team needs to “live” for 3 to 6 months at the deployment sites before go live to better understand how the pieces fit together for a given location
- Consider spending extra money to hire an IV&V contractor who understands SAP in depth to constructively challenge the implementer’s assumptions and approaches
- Collaborate face-to-face with and across installations as often as possible

4. Deployment plan/timeline

Plan the work and work the plan.

Project plan must be driven to lower levels to achieve an aggressive schedule. Project plan updates and monitoring must be given the highest priority to maintain momentum.

Plan for outside organization testing requirements, audit and DFAS for example. Plan for continuing education/marketing through out all phases of project (see Change Management, below).

Make an early decision on deployment date, at start of New Year or not. Document it and do not keep revisiting decision. There are advantages and disadvantages to both a start of the year deployment and a mid-year deployment. You may have both types of deployments, for large phased implementations, but the decision has a major impact on conversion development. If you plan a New Year start and miss it by a few months, there will be a major impact on your conversion programs.



Make an early decision on volume of data to be converted, most implementations are for on-going organizations, so open transactions must be converted.

Are closed historical data to be converted? If your implementation provides financial reporting, and a mid-year conversion is planned, how will consolidated financial reporting be accomplished?

Plan to clean up data in existing systems prior to conversion, experience shows some organizations with open transactions going back 10 or more years, with hundreds of open transactions to be converted.

5. Process “improvements”

Some systems implemented without the benefit of process re-design. In most of these cases, little was accomplished in terms of real organizational change; rather the project team attempted to rework the existing system(s), rather than the other way around. This is impossible and takes too much time and slows the project.

Include end users from the beginning of project to get their buy-in and cooperation. These personnel should be “A” players who can see the value of change, articulate what the users need and understand process goals, not just current practices.
See change management.

6. Best business practices

Make correct organizational structure decisions early and do not continuously revisit them. Business processes happen with the context of the organization’s physical/logical structure. Company codes as organizational units in SAP ERP are not relevant to federal implementations. Use a structure with only 1 company code.

Identifying the correct authoritative sources of data is a significant challenge; make sure your system is going to the source, not some intermediate authority.

Data management is a continuous process that extends beyond the initial implementation; establish specific roles and procedures to manage ongoing data integrity.

Consider requests for exceptions to current requirements:

- i.e. The three way match required between Purchase Order, Goods Receipts and Invoice if a purchase card user is picking up the purchased items, their verification of goods receipt adds no value to the transaction.

Consider the use vendor catalogs in implementation.

Challenge current DFAS functions and processes. Some DFAS functions are performed and their personnel are users in NAVAIR SAP implementation (SIGMA).

Make information more accessible. Do not restrict access to data to small organizational units. Navy has had excellent results with open access to transactions, even with access to all NAVAIR organizations – working capital and general fund.

7. Change Management

Change management efforts should represent 10% to 15% of project costs.



Communications within the organization.

Expectation reality must be managed. Organizations will go through phases, communications is key to leveling out expectations.

1. Peak of inflated expectations.
2. Trough of disillusionment.
3. Slope of enlightenment.
4. Plateau of productivity.

Experience shows ERP implementations have start up production problems, set expectations;

75% experience a moderate to severe productivity dip;

24% report no dip;

25% report a dip lasting one year;

More than 50% report a dip of less than six months.

Immediately after the go-live, there is stabilization or tuning period during which the new system is being adjusted to fit the organization, and vice versa. No matter how much testing is done, there are always some glitches when a new system begins to work in a real production environment with real data and real infrastructure. Set expectations. There is a high correlation between short productivity dips and effective change management practices. Long productivity dips correlate with lack of commitment to change management.

Organization members will always assume that an ERP implementation will be plug_and_play, and they will want to know the answers to all their questions as soon as the project starts. In other words everyone impacted by implementation will want to see a demonstration of the system immediately.

Use current organizational communication mechanisms or set up a web site for open and continuous communications. Tell them, tell them and tell them again. Use grapevine to your advantage, good and bad press has a ripple effect; use communications to build ownership or ignore it and clean up the mess later.

Communicate your small wins.

Demonstrations of the system should be planned throughout the implementation. For example start with a simple navigation demonstration, let the end users get a feel for operation and look of the ERP system to be used.

It is critical to communicate with leadership, down to the Manager level. Managers must be implementation supporters. They must know about the implementation plans and planned advantages of the implementation.

Plan and communicate conversion time line with leadership. Provide processes for operations during any “black out” period.

Manage management’s expectations for results, reports, etc. from the new system and what is different from the old system. Provide them with an orientation/training with respect to the workings of the new system so that they know what to expect and so that they are fully aware of the training needs for their people.

You need to properly and explicitly set the expectation of the degree of change that will be taking place and the impacts with respect to the “old way” of doing business.

Develop and deploy a multi-channel communication plan to tell people what is happening and why, when and how. Give people information in advance before you go live to understand what is happening and to prepare for change. Use demos to show how the system will work. In you



communications approach, do not only rely on e-mail. Use all means possible including newsletters and workshops.

Educate management on how the new business processes and systems work and educate users on the milestones of where the effort is going. Use both a “bottom up” and “top down” communications strategy.

From LMP “Due to the challenges associated with ERP implementation, the leadership must be fully engaged, and their best and brightest people have to be fully committed to the effort – it is not a part-time task that can be delegated. In selecting people and filling required positions, focus on mapping roles based upon functional responsibilities in the new environment, not job series”.

When the technology changes, the organizational structures and practices have to change too, or the technology will be sub-optimized. Projects need more coordination of decisions and actions across the functions at all levels, from senior management down to the end user. People need to share information, and team across functions to enable the organization to work in the way that ERP intends. The key here is that this change in management practice does not take place automatically just because the software is installed. It requires shifts in organizational structure – that is, roles and relationships, and it requires everyone to behave differently. Getting that to happen is the hard part. Management needs discipline to make it happen, and management needs practices that un-stick the organization from the way it has operated for a century and get it moving in a more integrated fashion.

There are many requirements for change in people, organization, and culture when ERP is introduced, but these changes don’t happen automatically just because you get new software. Each one of these requirements on the social side is a potential risk (since they don’t happen automatically when ERP is installed). They have to be identified and planned for, just as technical risks are managed. Example: Integrity of data in the system becomes more important; otherwise, reports coming out of the system will not be trusted, and people will go on doing business as usual. This means that behavior has to change. Just one illustration – people in warehouses and stockrooms have to take their jobs very seriously and not allow expeditors to enter and remove parts; they may need to lock down the stockroom, thereby offending expeditors who are used to easy access. This is just one small example, but it gets the idea across.

The change begins with an assessment of people, organization and culture, with a focus on risks and resources. These factors cannot be changed dramatically in the short run, but we do need to know what they are so that we can mitigate and leverage them.

Leadership – at all levels, including not only the top, but also the middle managers and supervisors who really run the organization. We need people who can articulate a vision for the future and explain the benefits; explain why we need it and the consequences for not adopting it; who can mobilize resources to support the effort and give incentives for change.

Communication – Messages need to get up and down the chain of command with no breaks in the middle. It needs to be two-way and responsive. People’s questions, issues and fears need to be addressed.

To do:

- Leadership must adopt a commitment to results and a vision of success.
- Communicate success stories and lessons to reinforce the positive impact of the transition
- Do away with the position that the effort will just be an improvement of the legacy system - This perception will set you up for failure
- Engage end users and align their expectations and requirements related to system output
- Work closely with users to establish reporting requirements and expectations



- Consider conducting an early adopter change management study to help sensitize management to the changes taking place
- Manage management's expectations for results from the new system and how it differs from the old system
- There needs to be encouragement by management of training attendance for their people
- You need to explicitly set the expectation of the degree of change that will be taking place and the impacts with respect to the "old way" of doing business
- Develop and deploy a multi-channel communication plan to tell people what is happening and why, when and how
- Educate management on how the new business processes and systems work and educate users on the milestones of where the effort is going
- Leverage events such as Commander's Conference to communicate needs and expectations
- To facilitate clear and consistent communication, identify and assign one entity or organization as the primary communications conduit\
- Given fluctuating requirements and system changes over time, you must keep everyone apprised of changes. To do so, institute a "what's new" area in your collaboration space.
- Develop a communication strategy that allows you to make users aware of system changes
- To achieve buy in, provide managers with usable decision making data early on to show them the value of the system
- To increase awareness and buy in, bring in supervisors and front line personnel and show them how the larger system can impact their work
- Take a hard look at how you can provide the same unique services and decision making data that was provided by the legacy system
- Develop a cadre of "Power Users" that can mentor front-line personnel and facilitate adoption and implementation
- Power Users are a critical resource to have available for implementation. These users can often come from users brought in to test and evaluate the system.
- Make sure that users are running analogous reports and are using the same measures. Real time reporting can lead to some confusion.

Communications within the implementation team.

Federal implementations are very integrated, due to the fact budgets are impacted by most transactions.

Try to organize an open floor plan for your work space. This will allow open communications between module and functional teams.

If an open floor plan is not possible, team work spaces and meeting rooms must be provided. One room should be large enough to have meetings with all team members.

Document and communicate decision making process.

Provide documentation of procedures and forms as early as possible.

Post the Project Plan and have the team work the plan.

Communicate conversion plans early, so all team members are on the same page.



Communications outside the organization.

Numerous Business Partners must be managed effectively:

- ERP Vendors
- CRM Vendors
- Customers, your invoice format may change
- Potential Customer/Suppliers
- User factions (in and out of organization)
- Web technology experts

Impacts on your project include;

- More effort to communicate
- Complex Scheduling
- Meeting methods/travel
- Multiple/diverse objectives
- Culture clash
- Assigning ownership for processes/problems
- Complex decision making process
- Differing expectations

Managing Change

The primary cause of failure is most frequently the failure to anticipate and effectively manage cultural and organization change. *Gartner*

Business processes must be realigned to reduce software enhancements.

“That’s the way we have always done it”, is not acceptable.

Existing documentation and requirements must be challenged and exceptions requested.

When a law, federal regulation, DoD or Army Policy is cited as the source of a requirement, surrender is not the only option. Present a strong enough business case and the right level of Executive Sponsorship and the law, federal regulation, or policy can be changed.

Leadership at all levels should drive overarching themes of vision and sense of urgency, identify and engage leadership early. Develop a strategy and implement it.

End user training is a change management tool.

Interfaces and Conversion extracts, cleansing and loading require changes the Change Management team should provide assistance in this area.

The system is so integrated that no one person can “know it all”. As early possible conduct role based training, identify and groom those individuals with high interest and aptitude.

The goal would be to develop these users into a resource to help in solving problems, conducting training plus identification and testing of enhancements and upgrades.

These resources are known in various circles as Power Users or Super Users.



Training

The importance of end-user training has been underestimated. Build core teams that can learn throughout the implementation.

Over training is impossible. Plan your training to cover processes, so users understand their role in integrated system.

Plan your training to be “just in time” for implementation.

Develop your training material using federal/organizations terms. Don’t try to train using only ERP terms. A purchase order is a contract, is an obligation.

Train your trainers on all integrated activities related to subject they will train.

Test your training material, with special attention to multiple users performing exercises in different classes. Does a training exercise in procurement interfere with an invoicing exercise?

Provide people with a “big picture” understanding of the ERP environment

Training must provide certification that trainees truly have the capability to utilize the system properly - The costs of potential mis-use are too great

Provide a detailed user’s manual to trainees so they can use it as a reference when on the job

Focus initial training on promoting an understanding of the new system environment and how it relates to the legacy system

Training must focus on the broader operating environment of the system earlier on.

Your training must fully address and explain the terminology of the new system

Once the system is up and running, organize and conduct an ongoing series of functional workshops to be given by peers from other “sister” cells

Documentation needs to be provided that details process flows from start to finish clarifying changes in how we do our business

Provide a side-by-side reference glossary of old and new lexicon

Basic management training is required to enable understanding business process areas and how each area affects the other

Provide “what if” scenario-based troubleshooting training

Give personnel a clear, concise overview of system, and the impacts it will have on business

Understand the need for student communication and foster it

Use cross-training across modules and particularly between internal process “customers and vendors” to aid in complex problem solving

Provide training before go live with sandbox simulations and maintain that sandbox after “go live” to provide risk free hands on training

Training needs to show how legacy functionality is “expressed”.

Organize training and tailor user manuals to context of site where it will be deployed so that students can put the material into perspective

You may want to develop an “exit test” to confirm student understanding of the material before they use the system

Establish a POC in your organization to manage training with the implementer because this is essential to help coordinate effective delivery

Seek out and rely on those people who have the greatest ability to manage change and learn new concepts

“Train the trainers” so that you can manage turnover and decrease reliance on integrator support

Start by having controllers specialize in a specific area of system responsibility - then focus on cross-training later



Make sure to leverage “Power Users” who can mentor and train personnel on the job during transition

When identifying and selecting Power Users, consider those who have *less* experience with legacy systems and processes

When identifying and selecting Power Users, look for leaders and change agents

Utilize expert users as a training tool. The expert users can share their on-the-job insights and “light bulb moments”

There should be a division of labor among the expert users. They cannot be experts in all facets of the system.

Plan for future training, personnel involved in position changes and new hires.

Key Learning’s:

- Contractor and Government need to both provide training since you will need to be able to “cross-walk” between the old system and the new
- Documentation needs to be provided that details process flows from start to finish clarifying changes in how we do our business. It should aid in understanding the details of interdependencies and linkages
- Differences in terminology create confusion when people call new stuff by old names and the lexicon has meanwhile changed. This creates great confusion and makes the change more difficult especially when translation between old and new is required.
- Hands-on, reality-based training is essential
- Basic management training is required to enable understanding business process areas and how each area affects the other. A basic high-level overview of system, and process changes is required for management - not necessarily the “nuts and bolts” how of what is done with the system.
- Student to student communication is important for training “absorption”
- Initial trainees and the SME’s you need to develop should be your best people and must have patience
- Hands-on training is critical. Lecture is not enough.
- Use UPerform, third party software.
- After classroom training, have students demonstrate learning by asking them to teach someone else based on what they know now. Adopt the training philosophy of “see one, do one, teach one”
- Cannot assume that users will use the system properly
- Implementer has to understand the business impact to the users.
- Tailor user manuals to context of site where it will be deployed
- Ensure student understanding of material. You may want to develop an “exit test” to confirm their understanding of the material before they use the system.
- Conduct training as close to implementation as possible (no more that two weeks).



8. Time/resource commitment

Do not try to split up your implementation team, the WHOLE team should be co-located, these implementations include integration of financial (Accounting and Budgeting), logistics, plant operations and maintenance. Additionally fixed asset accounting, warehouse management, production planning, managerial accounting, HR, grant accounting and contracting may be involved. Co-locate these team members.

Make sure all operational users in the organization:

- Participate– Getting involved and contributing improves quality and builds buy-in; when people feel a sense of ownership, they will learn more. Command alone is not sufficient in an organization with a lot of civilians.
- Get education and training – So they understand the concepts and goals, and how they fit in. Show the systems auto generated integration. Use scenarios from users own work; up-train dedicated experts to support co-workers on the floor; develop job aids that relate specifically to work tasks.
- Organizational change – Teamwork at all levels is required to facilitate data integration; flatten authority structures, give people more accountability and responsibility; build new career ladders that encourage people to develop expertise.
- Understand changes that are coming, manage resistance – if there is resistance, find out why; listen; address the issues; try to persuade, educate, communicate, involved. If all else fails, get them out of the way.

It is difficult to convince Commanders that they should dedicate their best and brightest resources. Staffing requirements have to be sold to management.

Cooperation is necessary and sometimes difficult with the data cleansing effort.

9. RICE objectives

RICE objectives refers to developing new or modifying existing software code. They include Reports, Interfaces, Conversions and Enhancements. Objectives from other federal implementations are available and should be used as must as possible.

Most projects under estimate the number of interfaces required by at least half. Don't forget interfaces for master data; Chart of Accounts, Vendor records, Customer Records, prompt payment interest rates, material masters, budget authority, inventories (RFID), Military and Civilian HR data, KSA information, flight hours, Foreign Military Sales...

Do not under estimate the advantages of leveraging other federal implementation artifacts, including RICE development work, core team policies, procedures and forms.

Reporting

- Spend time in identifying the specific data elements in existing or needed reports, locate those elements in SAP and create comparable reports. The look and feel of the new reports will be different from legacy reports.
- Challenge the need for special/mandated report formats



- The system has poor reporting tools. It can present masses of information in response to specific queries but does little in summarizing the data to digestible bits of information that can be the basis of management decisions.
- We “operated in the dark” for almost two years before adequate reports could be identified and created. We are just now (3+ years after implementation) seeing usable reports.
 - The data is available make sure your users have information they need.
 - Post go-live evaluate where users are spending time collecting information they need and automate the process for them.

Data Migration

Make early decision on data required for conversion. Financial implementations must take care to ensure year end reports can be generated.

Open logistics transactions will probably have to be converted, clean up/close old transactions.

Data migration should be separate from integration/interface programs and you should start data migration planning at beginning of project and run in parallel

Executive buy-in on data migration strategy essential

Processes and Plans should be created with a business focus versus an IT focus. Be wary of ‘sameness’ assumptions. Investigate gathering intelligence from embedded text field – especially where validation is based upon embedded text

Resources for data clean up and quality must be addressed.

ETL Use: Evaluate packaged ETL versus heavily modified ERP

Data Superiority: User data assumptions must be verified

Sustainable Quality Data: Built in validation, accommodations for ‘dirty’ data that must be moved; if migrating dirty data - must create risk, contingency, cleansing plans

Planning: Must have enforcement of procedures (written MOA and automated)

Continuing Errors: New system validation, especially when turned off due to dirty migration, must match new requirements

Potential Future Productivity Loss: Without proper prevention and planning may need to continually manually cleanse data

Must plan for continuing audit (ad hoc, scheduled, automated)

Planning: Stewardship, Validation, Methodology (e.g., manual, automated), Enforcement

Time: Plan for and understand the risks of manual vs. semi-automated vs. automated processes

Management: Priority order for cleansing imperative (active, cost, volume, necessity, etc.)

Prevention: ‘Once & Done’ approach without enforcement or validation = failure

ESCC training material

Units of issue/measure have to be watched closely. Watch your units in transition; Make sure you understand your units and how your current system and accounting uses units (e.g. different kinds of units like purchasing units, accounting units, etc.). Always default to the lowest unit of measure for an item.

Only migrate legacy data that is absolutely necessary. It will save considerable re-work later on

You must conduct a wall-to-wall inventory that is as complete and detailed as possible

Make sure that your initial data that you migrate is extremely accurate. It can save, or cost you months of extra work

Conduct detailed studies of your production workflow to capture accurate processing times



Be careful and detailed in establishing baseline data and system parameters - Lot-sizing can be particularly tricky

Weed out obsolete systems/items in a disciplined fashion

Put a priority on the data cleansing task since it is the heart of the new system – make people aware how critical this is. It should be THE up front priority

Establish regular milestones/check-ups to keep on schedule with your data cleansing and migration
Take your time and do the data migration right the first time. Carefully manage the quality of the migration by “hovering over” the effort

Units of issue/measure have to be watched closely. Make sure you understand your units and how your current system and accounting uses units

Bring the experts in early to work on the data migration efforts as a priority

Bottom line - If you don't clean your data or have a clear sense of its quality, don't migrate it. You can build it faster from scratch in the same time it takes to fix it

Carefully monitor process discipline and system usage by personnel early on. Future data quality and cleanliness is directly impacted by how well the users use the system

Consider migrating data into a sandbox staging area to analyze the migrated data before “go live” so you can get a look at its quality before you turn it loose

Run a pilot project on the transitioned data in the sandbox to provide the necessary confidence needed to decide on actual use of this data

To aid in tracking item numbers and minimize item redundancies, utilize the existing spreadsheet tool that other teams have used

To aid in data cleansing, there are a multitude of information resources available that can help. You have to utilize the people who know where they are and what they are

You can realize great benefit from eliminating items. To do so, you may need to incentivize their elimination and leverage de-mil dollars

You have to have buy in at multiple levels to execute the data cleansing effort. To this end, you should develop a baseline straw-man set of standard procedures and provide peer assistance in implementing them across installations

As you strive to eliminate obsolete or redundant items, you have to collaborate with “clients”. You have to show them what is in it for them to overcome potential resistance

In order to eliminate items, it is very likely that you will have to secure the services of a QASAS. If you do not, it is unlikely you will be able to eliminate items

Key Learning's:

- If not done with care and quality, your data migration can cause you great difficulty and take considerable “clean up” time later on.
- Only one pilot was utilized. The larger data cleansing effort was based upon the information from that one limited sample. A single pilot was insufficient since it focused on a discrete set of data and was not “real to life” or useful in estimating the level of effort required across the larger enterprise.
- IF the data that is slated to be migrated is not “clean” it should not be migrated at all.



Advice:

- Financial implementations must take care to ensure year end reports can be generated.
- Open logistics transactions will probably have to be converted, clean up/close old transactions.
- Weed out obsolete systems/items in a disciplined fashion.
- Put a priority on the data cleansing task since it is the heart of the new system – make people aware how critical this is. It should be THE up front priority.
- Establish regular milestones/check-ups to keep on schedule
- Find the right people to identify what needs to be cleared up/obsoleted as part of pre-deployment. To this end, item managers need to bring their expertise to the whole process.
- Bring the experts in early to work on the data migration efforts as a priority. Do not rush the migration of data and make sure you dedicate people to doing it
- Educate your management with respect to the complex and time-intensive nature of the data migration effort. Make sure that they understand that you will still have cleansing work to do after go live because it is unlikely that you will get it all right the first time.
- Carefully monitor process discipline and system usage by personnel early on in the program because future data quality and cleanliness is directly impacted by how well the users use the system. If users are improperly using the system, the data, no matter how clean at the start, will be corrupted if users put it in wrong – you need to be able to tell the difference between bad input by users and unclean legacy data.
- Consider migrating data into a sandbox staging area to analyze the migrated data before “go live” so you can get a look at it and then you can decide if you want to use it before you turn it on in the live system.
- For first implementation, test data migration timing into production system, tune up the timing and staging.

Under estimating interface development

In many years of experience, projects continue to under estimate number of interfaces required and complexity of those interfaces. Master data interfaces are missed the most. Interfaces planned to be in only direction will many times require two way interfaces.

The system you are planning for interface may be changing. Change schedules are not always be realistic.

Put time in your plan for cases, they will happen.

10. Testing/certification

Check early and often on testing and certification requirements:

- Auditors.
- Interface partners.
- DFAS
- Data standard organizations.
- DoD
- CIO
- Users outside the organization; Budget office, Finance, HR, Fixed Asset reporting/interface.



- Project management documentation.
 - Contract requirements.
- Any or all these may have security interests.

11. Post go live support

Have your implementation team and trainers on site(s) at go live for walk-in help.

Continue training

Will you have new employees after go live? Will you have employees changing jobs after go live? Plan to training after implementation.

Enhancement process

ERP implementations are not plug_and_play; organizations changes, requirements/regulations change and users with identify changes/enhancements to improve processes. Set up a process/procedure to enhance software after go live. Identify costs justification to prioritize enhancements.

Do not reduce your implementation team to quickly, use them to assist with training and then to enhance training.

Software/hardware upgrade processes

Moving to a new version of ERP software can take a project team up to a year of testing, including testing/changing RICE objects. How long will your version of software be support by the vendor? At about three or four years after a project is started, software upgrades should be planned. If it takes two years to perform first implementation and if you have a rollout schedule that covers an additional two years, plan time for an upgrade.

12. Archiving

In the newest ERP versions, archiving does necessarily mean that data/transactions are not available to users. Do not put off archiving until after implementation.

13. Defining Success?

Success is not just being on time and on budget, project must measure success by also looking at achieving objectives.

“We don’t know what we don’t know.....” Rumsfeld. What you don’t know, can hurt you. Impacts can come from unplanned custom programming, integration challenges and business events. Open up your risk and issues databases to your team, identify challenges early and resolve them early.



14. Critical Success Factors

From ESCC “Enterprise Resource Planning Reference Guide”

1. The Contract.
 - a. The contract must align with the solution – not a system, program or initiative.
 - b. The contract must preserve the natural business process boundaries of the software; not the organizational or financial boundaries of the receiving organizations.
2. Business Plan and Vision that Documents a Realistic Scope and Expectations.
 - a. Successful ERP projects require a clear vision of how the organization will meet strategic goals for the business processes in question. The vision must be shared.
 - b. Companies with executives who understand the problems and opportunities and set realistic ERP goals have a higher chance of success.
 - i. A good understanding of ERP, including the magnitude and duration of the effort, helps executives set realistic expectations.
 - c. A clear business plan and vision to steer the direction of the project is needed throughout the ERP lifecycle.
 - d. The project should be related to business needs and the needs should be clearly stated.
 - e. A business case that documents tangible benefits, costs, and risks must be produced.
 - f. Benefits and cost must be identified and tracked.
 - g. Key Concept: Misperceptions and Misunderstandings about ERP are common. Senior Executive Expectations may not be realistic – They may want success within a few months, when the design and implementation of a project may take two years.
3. Sufficient Budget for Project Completion.
 - a. Companies frequently undertake ERP project with inadequate funding for completion.
 - b. Managers often erroneously believe that ERP projects can be self-funding throughout their lifecycle, even in the short term.
 - i. ERP is problematic for organizations in poor financial condition.
 - c. Key Concept: To achieve success, a company must create an adequate budget and be willing to invest to achieve integration.
4. Define the End State.
 - a. A solution architecture that defines the end-state and the ability to manage/monitor relative to the end-state is critical to success.
 - b. An appropriate public sector implementation methodology must be used.
 - i. Methodologies that were designed for managing weapon system development are not appropriate for managing organizational transformation.
 - c. Key Concept: DoD 5000 is not optimized for enterprise transformation.
5. Architecture, Testing and Troubleshooting.
 - a. The overall solution architecture should be established before deployment, taking into consideration the requirements of the implementation – this prevents reconfiguration.
 - b. The organization should work with vendors and consultants to resolve software problem.
 - c. Quick response, patience, perseverance, problem solving and firefighting capabilities are important.
 - d. Vigorous and sophisticated integration testing must be pursued.
 - e. Modeling methods, architecture, and tools are critical.
 - f. There should be a plan for migrating and clearing historical data.
 - g. Proper tools and techniques, including the skills to use these tools, should be adopted.



- h. Key Concept: You would not build a house from a photograph, so why would you implement ERP from PowerPoint or Visio?
- 6. Project Management
 - a. A single individual should be given project management responsibility.
 - b. The scope must be clearly defined
 - c. Any proposed changes should be evaluated against the business case.
 - d. Scope expansion must be evaluated relative to additional time and costs required.
 - e. The project must be formally defined in term of milestones.
 - f. The forcing of timely decisions must be managed.
 - g. Deadlines must be met to stay on schedule and with budget to maintain credibility.
 - h. Project management must be disciplined and coordinated with training.
 - i. There should be planning of well defined tasks and accurate estimation of required effort.
 - j. Delivering early success is important.
 - k. Rapid, successive, and contained deliverables are critical.
 - l. Constant tracking of schedules and budgets against actuals are critical.
 - m. Key Concept: Follow the software provider's recommended work breakdown structure.
- 7. Monitoring and Evaluation of Performance
 - a. Achievements should be measured against project goals.
 - b. The progress of the projects should be monitored actively through set milestones and targets.
 - c. Project management criteria should be used to measure against completion dates, cost and quality.
 - d. After go-live, operational criteria should be used to measure against the production system.
 - e. Monitoring and feedback include the exchange of information between project team members and the analysis of user feedback.
 - f. Management must be provided information on how the new system affects business performance.
 - g. Performance should be tied to executive compensation.
 - h. Key Concept: If the wrong achievements are measured, or if the measures are not seriously managed, the probability of success is diminished.
- 8. ERP Teamwork and Composition
 - a. Empowered workers with a collaborative work style are need as member of cross-functional teams, both during and after an ERP implementation.
 - b. The team should have a mix of consultants and internal staff so the internal staff can develop the necessary system integration knowledge to support the implementation.
 - c. The ERP project should be the team's only priority and workload should be managed. Team members must be full-time dedicated to the project.
 - d. The team should be incentivized to implement the system on time and within budget.
 - e. Implementation team members must be trained in critical ERP concepts.
 - f. They should be familiar with the business process and the ERP products.
 - g. Information must be shared between the company and the consultants.
 - h. Partnerships should be managed with regularly scheduled meetings.
 - i. Incentives and risk sharing agreements should be used throughout the implementation lifecycle.
 - j. Enterprise-side culture and structured change should managed.



- k. A culture with share values and common objectives is conducive to success.
 - l. Key Concept: Empowered team members are needed during a project to identify and redesign business processes and to assist in the configuration of ERP software. After go-live, the same team members must execute the new business processes on an ongoing basis.
9. Project Champion
- a. Project sponsored commitment is critical to drive consensus to oversee the entire implementation lifecycle.
 - b. There must be a high level executive sponsor who has the power to set goals and legitimize change.
 - c. A single business leader should be in charge so there is a business perspective.
 - d. The leader must continually strive to resolve conflicts and manage resistance.
 - e. Key Concept: ERP project are likely to fail if they have the wrong champion. The wrong sponsor is:
 - i. Too low in the management ranks
 - ii. Too technically focused.
 - iii. Getting ready to retire or change jobs.
 - iv. Unable to manage the consultants (i.e., allows the consultant's to run the show).
 - v. Insistent on moving forward with ERP when ERP is not appropriate.
10. Effective Communication.
- a. It is almost impossible to over communicate when an ERP implementation is underway.
 - b. Expectations at every level must be communicated.
 - c. Communication includes the formal promotion of project teams and the advertisement of project progress to the rest of the organization.
 - d. Middle managers must communicate project importance.
 - e. Employees should be constantly briefed on the scope, objectives, activities, and updates in the project.
 - f. Key Concept: Communications with employees should focus on the positive aspects of ERP, emphasizing the growth opportunities in situations that may have a first looked like problems.
11. Shared Context of Growth and Expansion
- a. ERP projects that are viewed by managers and employees in terms of growth and expansion, rather than in terms of downsizing and cost cutting, have a higher chance of success because they generate more enthusiasm.
 - b. Managers and employees will rally around important strategic initiatives in ways that rarely happen when the focus is completely on cutting cost.
 - c. Key Concept: ERP must be seen as an invigorating opportunity to grow the business and expand markets, rather than an occasion for cutting jobs.
12. The ERP Production Database must be Self-contained and Stable.
- a. With ERP, the production database supports all business processes within the natural boundaries of the software. Data is entered once and shared across the enterprise.
 - b. If data sources fall outside the ERP solution boundary (as in many public sector implementations), and if incoming data quality is low, the probability of failure is enhanced.
 - c. Key Concept: High data quality is the key to rapid post-go-live stabilization.



13. An Implementation Team that Understands the Technologies and a Project Management Team that Understands the Technologies as Well as the Business.
 - a. No on the job training.
 - b. Not traditional program office personnel.
 - c. Key Concept: 10 people at \$300/hour who know what they are doing is better than 100 people at \$100/hour who are learning on the job.
14. A Governance Model that Supports Rapid Decision Making.
 - a. Empower the GS 14-15's with decision making authority.
 - i. Have decisions documented.
 - b. Reduce IPT's (too much time invested – momentum gets lost).
 - c. 48 hour turnaround on all configuration or critical project decisions.
 - d. Key Concept: Crisp decision making and control across stovepipes is essential.
15. ERP implementations Are Enterprise Transformation Projects, Not information System Implementation Projects.
 - a. A management approach that focuses on transforming the enterprise must be used, with the associated system being of secondary importance.
 - b. Contractual approaches for implementing systems (i.e. programs) in stove piped organizational domains will not work with integrated enterprise software.
 - c. Key Concept: Business Dominates – Technology Enables.